

REMARKS

Status of the Claims

Claims 1, 5-8, 10, 11, 15, 18, 22, 24, 27, 30-38, 40, 43, 44, 46 and 68 are pending. In accordance with the foregoing, the claims are amended, and, thus, the pending claims remain for reconsideration, which is respectfully requested. Respectfully, the rejections are traversed.

Allowable Subject Matter

Claims 43, 44, and 46 are allowed.

Claims Rejections under 35 USC § 103

Claims 8, 11, 15, 22, 40, and 68 are rejected under 35 USC § 103(a) as being unpatentable over Seki et al (6,734,513) in view of Asada et al (5,872,496).

Claims 6 and 7 are rejected under 35 USC § 103(a) as being unpatentable over Seki et al and further in view of Hyman et al (6,504,118).

Claims 1, 5, 8-11, 18, 22, and 40 are rejected under 35 USC § 103(a) as being unpatentable over Seki et al in view of Asada et al and further in view of Dereus (6,876,482).

Claims 24, 27, 30-35, and 36 are rejected under 35 USC § 103(a) as being unpatentable over Seki et al in view of Asada and in further view of Hyman et al.

Claims 37 and 38 are rejected under 35 USC § 103(a) as being unpatentable over Seki et al in view of Asada et al and in view of DeReus and in further view of Hyman et al.

Claims 1, 15, 18, 24, 27 30-38 and 68 are rejected independent claims, which are variously rejected over Seki, Asada, Hyman and DeRues.

The independent claims, using claim 68 as an example, are amended to recite

a second substrate, having a stationary contact, facing the first substrate; and ...

a portion parallel relative to the first and second substrates having a movable electrode facing the stationary electrode, and a movable contact facing the stationary contact, and ...

wherein the multiple movable contacts are located between the stationary contacts without making contact with any of the stationary contacts of the first and second substrates when a voltage is not applied between the movable electrode and the stationary electrode, and

when the multiple movable contacts are released from a connecting state in which the movable contacts make a connection with the stationary contacts of the first substrate, the movable

contacts are disconnected therefrom and make a connection with the stationary contact of the second substrate that is at a ground potential.

The claim amendments are supported at pages 19-20, lines 25-10.

Seki relates to, as shown in FIG. 3, the movable element 20 is such that a movable electrode 24 is supported via four support beams 23 extending from a planar, generally C-shaped anchor 22 so as to be driven in the thickness direction. The support beams 23 are formed by forming slits 21. In the movable electrode 24, a movable contact piece 26 is defined by two slits 25, 25 that are juxtaposed at the center of the movable electrode 24. See col. 5, lines 12-18.

The configuration of the support beams 23 disclosed in Seki (see the lower left-hand side of the movable electrode 24, as seen in FIG. 3 of Seki) only allow the moveable electrode to move in a non-perpendicular direction and would inhibit the movable electrode 24 of Seki from "movingly suspending the portion from the frame while maintaining a parallel state relative to the first and second substrates." That is, Seki would not be able to maintain "a parallel state relative to the first and second substrates."

Asada relates to a planar movable plate 5, and torsion bars 6 for axially supporting the movable plate 5 at a central location thereof so as to be swingable in a perpendicular direction relative to the silicon substrate 2, are formed integrally with the silicon substrate 2 by anisotropic etching. See col. 4, lines 28-32. Asada discusses that a movable plate swings in perpendicular direction relative to the substrate.

DeReus relates to beams 108 and 702, respectively, having one end fixed at a mount 110 and only the opposite end is deflectable. See Figs. 2 and 9. Figure 7 shows a switch 700 that includes a beam 702 that includes an electrode interconnect 708 and a contact interconnect 710 attached to the top side of a structural layer 706. A movable electrode 712 and a movable contact 714 are attached to the underside of the structural layer 706 and positioned in alignment with and dimensioned substantially the same as the electrode interconnect 708 and interconnect 710. The MEMS switch 700 includes a first stationary contact 716 and a second stationary contact 718 formed on the substrate.

Hyman relates to armatures 309 and 389 where one end is fixed at ends 310 and 190, respectively, and the opposite end is deflectable. See Figs., 13A-13C.

In contrast, the independent claims, using claim 68 as an example, provide "a portion parallel relative to the first and second substrates ... and a plurality of hinge springs movingly

suspending the portion from the frame while maintaining a parallel state relative to the first and second substrates" and "the multiple movable contacts are located between the stationary contacts without making contact with any of the stationary contacts of the first and second substrates when a voltage is not applied between the movable electrode and the stationary electrode, and when the multiple movable contacts are released from a connecting state in which the movable contacts make a connection with the stationary contacts of the first substrate, the movable contacts are disconnected therefrom and make a connection with the stationary contact of the second substrate that is at a ground potential."

In other words, a prima facie case of obviousness based upon Seki and Asada has not been established, because there is no evidence expressly or implicitly that one skilled in the art would combine Seki's structure to Asada's, and then further modify Seki's structure to resemble Hyman's or DeReus' MEM's structure and seeing a benefit of improving the isolation between the movable contacts and the stationary contacts. In view of the above arguments, and for at least these reasons, the pending claims patentably distinguish over the cited arts and, thus, withdrawal of the rejections and allowance of the claims is requested

Conclusion

In view of the remarks presented above, there being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance, and withdrawal of the rejection of pending claims and allowance of pending claims is respectfully requested. An early action to that effect is courteously solicited.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,
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